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Numerical analysis of aluminum foam sandwich subjected to compression loading (Article)

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Abstract

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Demand using aluminum foam sandwich in various application of industry keep increasing. Hence, the reliable numerical models are still required and need to be enhanced by observing the mechanical behavior of the sandwich structure. Numerical analysis of aluminum foam sandwich that subjected to compression loading had been analyzed using LS-DYNA software. Three different thickness of aluminum foam (3.2mm, 5.6mm, 6.35mm) and three different thickness of aluminum sheet (0.4mm, 0.6mm, 0.8mm) had been selected to investigate their pattern of force-displacement curves and energy absorbed. The numerical results have been validated by experimental results for comparison. The findings show that simulation results exhibit good agreement with the experimental results in terms of their trend in force-displacement curves and deformation behavior of the sandwich structures. The increment in peak force and energy absorbed affected by increasing the thickness of foam and aluminum sheet © BEIESP.

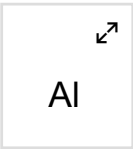
SciVal Topic Prominence

Topic: Foams | Energy absorption | Aluminium foam

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Chemistry database information

Substances



Author keywords

Aluminum foam sandwich Energy LS-DYNA Numerical analysis

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